SEQUENCE LISTING

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<141> 2004-02-05

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<151> 1999-03-16

<150> US 09/524,101
<151> 2000-03-13

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<151> 2000-02-23

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<170> PatentIn version 3.2

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<212> PRT
<213> Drosophila melanogaster

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35 40 45

Gln Gly Leu Asn Ser Gly Asn Leu Met Gln Phe Ser Gln Gln Ser Val
50 55 60

Leu Arg Glu Met Met Leu Gln Asp Ile Gln Ile Gln Ala Asn Thr Leu
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Pro Lys Leu Glu Asn His Asn Ile Gly Gly Tyr Cys Phe Ser Met Val
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Leu Asp Glu Pro Pro Lys Ser Leu Trp Met Tyr Ser Ile Pro Leu Asn
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Lys Leu Tyr Ile Arg Met Asn Lys Ala Phe Asn Val Asp Val Gln Phe
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Lys Ser Lys Met Pro Ile Gln Pro Leu Asn Leu Arg Val Phe Leu Cys
    130                 135                 140

Phe Ser Asn Asp Val Ser Ala Pro Val Val Arg Cys Gln Asn His Leu
145                 150                 155                 160

Ser Val Glu Pro Leu Thr Ala Asn Asn Ala Lys Met Arg Glu Ser Leu
                165                 170                 175

Leu Arg Ser Glu Asn Pro Asn Ser Val Tyr Cys Gly Asn Ala Gln Gly
            180                 185                 190

Lys Gly Ile Ser Glu Arg Phe Ser Val Val Val Pro Leu Asn Met Ser
        195                 200                 205

Arg Ser Val Thr Arg Ser Gly Leu Thr Arg Gln Thr Leu Ala Phe Lys
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Phe Val Cys Gln Asn Ser Cys Ile Gly Arg Lys Glu Thr Ser Leu Val
225                 230                 235                 240

Phe Cys Leu Glu Lys Ala Cys Gly Asp Ile Val Gly Gln His Val Ile
                245                 250                 255

His Val Lys Ile Cys Thr Cys Pro Lys Arg Asp Arg Ile Gln Asp Glu
            260                 265                 270

Arg Gln Leu Asn Ser Lys Lys Arg Lys Ser Val Pro Glu Ala Ala Glu
        275                 280                 285

Glu Asp Glu Pro Ser Lys Val Arg Arg Cys Ile Ala Ile Lys Thr Glu
    290                 295                 300

Asp Thr Glu Ser Asn Asp Ser Arg Asp Cys Asp Asp Ser Ala Ala Glu
305                 310                 315                 320

Trp Asn Val Ser Arg Thr Pro Asp Gly Asp Tyr Arg Leu Ala Ile Thr
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Cys Pro Asn Lys Glu Trp Leu Leu Gln Ser Ile Glu Gly Met Ile Lys
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Pro
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<210> 3
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<212> DNA
<213> Leptinotarsa decemlineata

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<213> Leptinotarsa decemlineata

<400> 4

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Asp Glu Pro Thr Leu Asn Asp Leu Asn Tyr Ser Asn Ile Leu Asn Gly
        35                  40                  45

Ser Ile Val Ala Asn Asp Asp Ser Lys Met Val His Leu Ile Phe Pro
    50                  55                  60

Gly Val Gln Thr Ser Val Pro Ser Asn Asp Glu Tyr Asp Gly Pro Tyr
65                  70                  75                  80

Glu Phe Glu Val Asp Val His Pro Thr Val Ala Lys Asn Ser Trp Val
                85                  90                  95

Tyr Ser Thr Thr Leu Asn Lys Val Tyr Met Thr Met Gly Ser Pro Phe
            100                 105                 110

Pro Val Asp Phe Arg Val Ser His Arg Pro Pro Asn Pro Leu Phe Ile
        115                 120                 125

Arg Ser Thr Pro Val Tyr Ser Ala Pro Gln Phe Ala Gln Glu Cys Val
    130                 135                 140

Tyr Arg Cys Leu Asn His Glu Phe Ser His Lys Glu Ser Asp Gly Asp
145                 150                 155                 160

Leu Lys Glu His Ile Arg Pro His Ile Ile Arg Cys Ala Asn Gln Tyr
                165                 170                 175

Ala Ala Tyr Leu Gly Asp Lys Ser Lys Asn Glu Arg Leu Ser Val Val
            180                 185                 190

Ile Pro Phe Gly Ile Pro Gln Thr Gly Thr Glu Ser Val Arg Glu Ile
        195                 200                 205

Phe Glu Phe Val Cys Lys Asn Ser Cys Pro Ser Pro Gly Met Asn Arg
    210                 215                 220
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Arg Ala Val Glu Ile Ile Phe Thr Leu Glu Asp Asn Gln Gly Thr Ile
225                 230                 235                 240

Tyr Gly Arg Lys Thr Leu Asn Val Arg Ile Cys Ser Cys Pro Lys Arg
                245                 250                 255

Asp Lys Glu Lys Asp Glu Lys Asp Asn Thr Ala Asn Thr Asn Leu Pro
            260                 265                 270

His Gly Lys Lys Arg Lys Met Glu Lys Pro Ser Lys Lys Pro Met Gln
        275                 280                 285

Thr Gln Ala Glu Asn Asp Thr Lys Glu Phe Thr Leu Thr Ile Pro Leu
    290                 295                 300

Val Gly Arg His Asn Glu Gln Asn Val Leu Lys Tyr Cys His Asp Leu
305                 310                 315                 320

Met Ala Gly Glu Ile Leu Arg Asn Ile Gly Asn Gly Thr Glu Gly Pro
                325                 330                 335

Tyr Lys Ile Ala Leu Asn Lys Ile Asn Thr Leu Ile Arg Glu Ser Ser
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<210> 5
<211> 1291
<212> DNA
<213> Tribolium castaneum

<400> 5

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aataatgcac gaaaacaacg tccatttagt aaatgacgac ggagaagaag aaaaatactc    240

taatgaagcc aattacactg aatcaatttt ccccccccgac cagcccacaa acctaggcac    300

tgaggaatac ccaggccctt ttaatttctc agtcctgatc agccccaacg agcaaaaatc    360

gccctgggag tattcggaaa aactgaacaa aatattcatc ggcatcaacg tgaaattccc    420
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caccaacgac aacgccctat actttggcga taaaaacaca gggacgagac tcaacatcgt 660

cctgcctttg gcccaccccc aggtgggggga ggacgtggtc aaggagtttt tccagtttgt 720

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<212> PRT
<213> Tribolium castaneum

<400> 6

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20 25 30

Glu Asn Asn Val His Leu Val Asn Asp Asp Gly Glu Glu Glu Lys Tyr
35 40 45

Ser Asn Glu Ala Asn Tyr Thr Glu Ser Ile Phe Pro Pro Asp Gln Pro
50 55 60

Thr Asn Leu Gly Thr Glu Glu Tyr Pro Gly Pro Phe Asn Phe Ser Val
65 70 75 80

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Leu Ile Ser Pro Asn Glu Gln Lys Ser Pro Trp Glu Tyr Ser Glu Lys
                85                  90                  95

Leu Asn Lys Ile Phe Ile Gly Ile Asn Val Lys Phe Pro Val Ala Phe
            100                 105                 110

Ser Val Gln Asn Arg Pro Gln Asn Leu Pro Leu Tyr Ile Arg Ala Thr
        115                 120                 125

Pro Val Phe Ser Gln Thr Gln His Phe Gln Asp Leu Val His Arg Cys
    130                 135                 140

Val Gly His Arg His Pro Gln Asp Gln Ser Asn Lys Gly Val Ala Pro
145                 150                 155                 160

His Ile Phe Gln His Ile Ile Arg Cys Thr Asn Asp Asn Ala Leu Tyr
                165                 170                 175

Phe Gly Asp Lys Asn Thr Gly Thr Arg Leu Asn Ile Val Leu Pro Leu
            180                 185                 190

Ala His Pro Gln Val Gly Glu Asp Val Val Lys Glu Phe Phe Gln Phe
        195                 200                 205

Val Cys Lys Asn Ser Cys Pro Leu Gly Met Asn Arg Arg Pro Ile Asp
    210                 215                 220

Val Val Phe Thr Leu Glu Asp Asn Lys Gly Glu Val Phe Gly Arg Arg
225                 230                 235                 240

Leu Val Gly Val Arg Val Cys Ser Cys Pro Lys Arg Asp Lys Asp Lys
                245                 250                 255

Glu Glu Lys Asp Met Glu Ser Ala Val Pro Pro Arg Arg Lys Lys Arg
            260                 265                 270

Lys Leu Gly Asn Asp Glu Arg Arg Val Val Pro Gln Gly Ser Ser Asp
        275                 280                 285

Asn Lys Ile Phe Ala Leu Asn Ile His Ile Pro Gly Lys Lys Asn Tyr
    290                 295                 300

Leu Gln Ala Leu Lys Met Cys Gln Asp Met Leu Ala Asn Glu Ile Leu
305                 310                 315                 320
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Lys Lys Gln Glu Gln Gly Gly Asp Asp Ser Ala Asp Lys Asn Cys Tyr
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Asn Glu Ile Thr Val Leu Leu Asn Gly Thr Ala Ala Phe Asp
340 345 350

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<211> 508
<212> DNA
<213> Tribolium castaneum

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ttccccccca gcgagccgct cgagctgtgc aacaccgagt accccggccc cctcaacttc 180

gaggtgtttg tggaccccaa cgtgctcaaa aacccctggg aatactcccc aattctcaac 240

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cctgagcgca ggctttttgt cagagttatg ccgatgtttg aggaagacag atatgtgcaa 360

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<210> 8
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<212> PRT
<213> Tribolium castaneum

<400> 8

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Ser Ser Tyr Leu Ser Ala Pro Ile Phe Pro Pro Ser Glu Pro Leu Glu
35 40 45

Leu Cys Asn Thr Glu Tyr Pro Gly Pro Leu Asn Phe Glu Val Phe Val
50 55 60

Asp Pro Asn Val Leu Lys Asn Pro Trp Glu Tyr Ser Pro Ile Leu Asn
65 70 75 80

Lys Ile Tyr Ile Asp Met Lys His Lys Phe Pro Ile Asn Phe Ser Val
85 90 95

Lys Lys Ala Asp Pro Glu Arg Arg Leu Phe Val Arg Val Met Pro Met
100 105 110

Phe Glu Glu Asp Arg Tyr Val Gln Glu Leu Val His Arg Cys Ile Cys
115 120 125

His Glu Gln Leu Thr Asp Pro Thr Asn His Asn Val Ser Glu Met Val
130 135 140

Ala Gln His Ile Ile Arg Cys Asp Asn Asn Asn Ala Gln Tyr Phe Gly
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Asp Lys Asn Ala Gly Lys Arg Leu Ser
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<211> 433
<212> DNA
<213> Heliothis virescens

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acgatgtgtg cagcatttcc atgaaagctc cacttctgga atccaaacag aaattgccaa 180

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<210> 10
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<212> PRT
<213> Heliothis virescens

<400> 10

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            20                  25                  30

Thr Gln Ala Glu Lys Arg Val Glu Arg Cys Val Gln His Phe His Glu
        35                  40                  45

Ser Ser Thr Ser Gly Ile Gln Thr Glu Ile Ala Lys Asn Val Leu His
    50                  55                  60

Ser Ser Arg Glu Ile Gly Thr Gln Gly Val Tyr Tyr Cys Gly Lys Val
65                  70                  75                  80

Asp Met Ala Asp Ser Trp Tyr Ser Val Leu Val Glu Phe Met Arg Thr
                85                  90                  95

Ser Ser Glu Ser Cys Ser His Ala Tyr Gln Phe Ser Cys Lys Asn Ser
            100                 105                 110

Cys Ala Thr Gly Ile Asn Arg Arg Ala Ile Ala Ile Ile Phe Thr Leu
        115                 120                 125

Glu Asp Ala Met Gly Asn Ile His Gly Arg Gln Lys Val Gly Ala Arg
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agaaaaagcg caaggtacgc ggttctgggg cttcaaatgc caatgccagt acgcgagagg 1200

agacgccgcc gccggagacc attgatccgg acgagccgac ctactgtgtc tgcaatcaga 1260

tctcctttgg cgagatgatc ctgtgcgaca atgacctgtg ccccatcgag tggttccatt 1320

tttcgtgcgt ctccctggta ctaaaaccaa aaggcaagtg gttctgcccc aactgccgcg 1380

gagaacggcc aaatgtaatg aaacccaagg cgcagttcct caaagaactg gagcgctaca 1440

acaaggaaaa ggaggagaag acctagtcta ttaggccagc ctatccaacc cattgctctg 1500

tgtctaacac caggctctgt aaaatattcg atcctaagat ttaccttaat gtatatttag 1560

tgactttctt agacccgatc ccttttcgac tttcccctct ttcacccagt ttagatccct 1620

cgcttctatg gttataggtc gtcagttttc atttaaagtt tctgtacaaa caatatcttt 1680

ctcaatgtaa acacacaaaa actcgtataa ttagagtaca cctaaactta atttatggta 1740

ataaacgttg atattcaaaa aaaaaaaaaa aaaaaactcg a 1781

<210> 20
<211> 433
<212> PRT
<213> Drosophila melanogaster

<400> 20

Met Ile Asn Pro Ile Ala Ser Glu Ser Glu Ala Ile Asn Ser Ala Thr
1 5 10 15

Tyr Val Asp Asn Tyr Ile Asp Ser Val Glu Asn Leu Pro Asp Asp Val
20 25 30

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Gln Arg Gln Leu Ser Arg Ile Arg Asp Ile Asp Val Gln Tyr Arg Gly
        35                  40                  45

Leu Ile Arg Asp Val Asp His Tyr Tyr Asp Leu Tyr Leu Ser Leu Gln
    50                  55                  60

Asn Ser Ala Asp Ala Gly Arg Arg Ser Arg Ser Ile Ser Arg Met His
65                  70                  75                  80

Gln Ser Leu Ile Gln Ala Gln Glu Leu Gly Asp Glu Lys Met Gln Ile
                85                  90                  95

Val Asn His Met Gln Glu Ile Ile Asp Gly Lys Leu Arg Gln Leu Asp
            100                 105                 110

Thr Asp Gln Gln Asn Leu Asp Leu Lys Glu Asp Arg Asp Arg Tyr Ala
        115                 120                 125

Leu Leu Asp Asp Gly Thr Pro Ser Lys Leu Gln Arg Leu Gln Ser Pro
    130                 135                 140

Met Arg Glu Gln Gly Asn Gln Ala Gly Thr Gly Asn Gly Gly Leu Asn
145                 150                 155                 160

Gly Asn Gly Leu Leu Ser Ala Lys Asp Leu Tyr Ala Leu Gly Gly Tyr
                165                 170                 175

Ala Gly Gly Val Val Pro Gly Ser Asn Ala Met Thr Ser Gly Asn Gly
            180                 185                 190

Gly Gly Ser Thr Pro Asn Ser Glu Arg Ser Ser His Val Ser Asn Gly
        195                 200                 205

Gly Asn Ser Gly Ser Asn Gly Asn Ala Ser Gly Gly Gly Gly Gly Glu
    210                 215                 220

Leu Gln Arg Thr Gly Ser Lys Arg Ser Arg Arg Arg Asn Glu Ser Val
225                 230                 235                 240

Val Asn Asn Gly Ser Ser Leu Glu Met Gly Gly Asn Glu Ser Asn Ser
                245                 250                 255
```

```
Ala Asn Glu Ala Ser Gly Ser Gly Gly Gly Ser Gly Glu Arg Lys Ser
            260                 265                 270

Ser Leu Gly Gly Ala Ser Gly Ala Gly Gln Gly Arg Lys Ala Ser Leu
        275                 280                 285

Gln Ser Ala Ser Gly Ser Leu Ala Ser Gly Ser Ala Ala Thr Ser Ser
    290                 295                 300

Gly Ala Ala Gly Gly Gly Gly Ala Asn Gly Ala Gly Val Val Gly Gly
305                 310                 315                 320

Asn Asn Ser Gly Lys Lys Lys Arg Lys Val Arg Gly Ser Gly Ala
                325                 330                 335

Ser Asn Ala Asn Ala Ser Thr Arg Glu Glu Thr Pro Pro Pro Glu Thr
            340                 345                 350

Ile Asp Pro Asp Glu Pro Thr Tyr Cys Val Cys Asn Gln Ile Ser Phe
        355                 360                 365

Gly Glu Met Ile Leu Cys Asp Asn Asp Leu Cys Pro Ile Glu Trp Phe
    370                 375                 380

His Phe Ser Cys Val Ser Leu Val Leu Lys Pro Lys Gly Lys Trp Phe
385                 390                 395                 400

Cys Pro Asn Cys Arg Gly Glu Arg Pro Asn Val Met Lys Pro Lys Ala
                405                 410                 415

Gln Phe Leu Lys Glu Leu Glu Arg Tyr Asn Lys Glu Lys Glu Glu Lys
            420                 425                 430

Thr
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<210> 21
<211> 2666
<212> DNA
<213> Drosophila melanogaster

<400> 21
cattttgtac agtctaaacg gggattcgcg taaactacgc agaaatataa acaaacaaaa 60

actagtagac tatagaatat aaacagtttc ctaccaatgg agacttgtga agtggaggga 120

gaggcggaga cgctggtgag acgcttctcc gtcagctgcg agcaattgga gctggaagcg 180

agaattcagc aaagcgctct gtccacctac catcgcttgg atgcggtcaa cgggctgtcc 240

accagcgagg cagatgccca ggagtggctg tgttgcgccg tctacagcga actgcagcgc 300

tcgaagatgc gcgatattag ggagtccatc aacgaggcaa acgattcggt ggccaagaac 360

tgctgctgga acgtgtcact aacccgtctg ctgcgcagct ttaagatgaa cgtgtcccag 420

tttctacgcc gcatggagca ctggaattgg ctgacccaaa acgagaacac tttccagctg 480

gaggttgagg aactgcgttg tcgacttggt attacttcga cgctgctgcg gcattataag 540

cacatctttc ggagcctgtt cgttcacccg gcaagggtgc ggacccgggt gccgcgaatc 600

actaccaagc gctgtatgag ttcggttggt tgctcttcct ggtcattcgc aacgagttac 660

ccggttttgc gattacaaac ctgatcaacg gctgtcaggt gctcgtttgc acaatggatc 720

tccttttcgt gaacgcctta gaggtgcccc gatccgtagt tatccgccgg gagttctctg 780

gagtgcccaa gaattgggac accgaagact tcaatcctat tttgctaaat aaatatagcg 840

tgctagaagc actgggagaa ctgattcccg agctaccagc gaagggagtg gtgcaaatga 900

agaacgcctt tttccacaaa gccttaataa tgctctatat ggaccatagt ctagttggag 960

acgacaccca tatgcgggag atcattaagg agggtatgct agatatcaat ctggaaaact 1020

taaatcgcaa atacaccaat caagtagccg acattagtga gatggacgag cgtgtgctgc 1080

tcagcgtcca gggggcgata gagaccaaag gggactctcc taaaagccca cagctcgcct 1140

tccaaacaag ctcgtcacct tcgcatagga agctgtccac ccatgatcta ccagcaagtc 1200

ttcccctaag cattataaaa gcattcccca agaaggaaga cgcagataaa attgtaaatt 1260

atttagatca aactctggaa gaaatgaatc ggacctttac catggccgtg aaagattttt 1320

tggatgctaa gttgtctgga aaacgattcc gccaggccag aggcctttac tacaaatatt 1380

tgcagaaaat tttgggaccg gagctggttc aaaaaccaca gctgaagatt ggtcagttaa 1440

tgaagcagcg caagcttacc gccgccctgt tagcttgctg cctggaactg gcacttcacg 1500

tccaccacaa actagtggaa ggcctaaggt ttccctttgt cctgcactgc ttttcactgg 1560

acgcctacga ctttcaaaag attctagagt tggtggtgcg ctacgatcat ggttttctgg 1620

gcagagagct gatcaagcac ctggatgtgg tggaggaaat gtgcctggag tcgttgattt 1680

tccgcaagag ctcacagctg tggtgggagc taaatcaaag acttccccgc tacaaggaag 1740

tcgatgcaga aacagaagac aaggagaact tttcaacagg ctcaagcatc tgccttcgaa 1800

agttctacgg actggccaac cggcggctgc tccttctgtg taagagtctt tgcctcgtgg 1860

attcctttcc ccaaatatgg cacctggccg agcactcttt caccttagag agtagccgtc 1920

tgctccgcaa tcgacacctg gaccaactgc tgttgtgcgc catacatctt catgttcggc 1980

tcgagaagct tcacctcact ttcagcatga ttatccagca ctatcgccga cagccgcact 2040

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ctttctacaa cagtgtgtat gtccaaagta tgggcaacta tggccgccac ctggagtgtg 2160

cgcaaacacg caagtcactg gaagaatcac agagtagcgt tggtattctg acggaaaaca 2220

acttccaacg aattgagcat gagagccaac atcagcatat cttcaccgcc ccctcccagg 2280

gtatgccaaa gtggctcctg ctccagtcat ccaccttcat ctcccgccgc atcaccactt 2340

tccttgcaaa gctcgcccaa cgtaaagcgt gctgcttcga gtaacgactt gatgagagag 2400

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aaaggcttaa atacttggct gcattttacg cagctagctt agtatatttc ttaaactcaa 2520

aaatggtaat taaataatgt ttaaattata gatattttat taacttgttc aagtaagtta 2580

aaagcttttg cttttgtaaa aataaaggaa taactgccac tcgtagttta aataaatttt 2640

taaaaaaaaa aaaaaaaaaa ctcgag 2666

<210> 22
<211> 556
<212> PRT
<213> Drosophila melanogaster

<400> 22

Met Asp Leu Leu Phe Val Asn Ala Leu Glu Val Pro Arg Ser Val Val
1 5 10 15

Ile Arg Arg Glu Phe Ser Gly Val Pro Lys Asn Trp Asp Thr Glu Asp
20 25 30

Phe Asn Pro Ile Leu Leu Asn Lys Tyr Ser Val Leu Glu Ala Leu Gly
35 40 45

Glu Leu Ile Pro Glu Leu Pro Ala Lys Gly Val Val Gln Met Lys Asn
50 55 60

Ala Phe Phe His Lys Ala Leu Ile Met Leu Tyr Met Asp His Ser Leu
65 70 75 80

Val Gly Asp Asp Thr His Met Arg Glu Ile Ile Lys Glu Gly Met Leu
85 90 95

```
Asp Ile Asn Leu Glu Asn Leu Asn Arg Lys Tyr Thr Asn Gln Val Ala
            100                 105                 110

Asp Ile Ser Glu Met Asp Glu Arg Val Leu Leu Ser Val Gln Gly Ala
        115                 120                 125

Ile Glu Thr Lys Gly Asp Ser Pro Lys Ser Pro Gln Leu Ala Phe Gln
    130                 135                 140

Thr Ser Ser Ser Pro Ser His Arg Lys Leu Ser Thr His Asp Leu Pro
145                 150                 155                 160

Ala Ser Leu Pro Leu Ser Ile Ile Lys Ala Phe Pro Lys Lys Glu Asp
                165                 170                 175

Ala Asp Lys Ile Val Asn Tyr Leu Asp Gln Thr Leu Glu Glu Met Asn
            180                 185                 190

Arg Thr Phe Thr Met Ala Val Lys Asp Phe Leu Asp Ala Lys Leu Ser
        195                 200                 205

Gly Lys Arg Phe Arg Gln Ala Arg Gly Leu Tyr Tyr Lys Tyr Leu Gln
    210                 215                 220

Lys Ile Leu Gly Pro Glu Leu Val Gln Lys Pro Gln Leu Lys Ile Gly
225                 230                 235                 240

Gln Leu Met Lys Gln Arg Lys Leu Thr Ala Ala Leu Leu Ala Cys Cys
                245                 250                 255

Leu Glu Leu Ala Leu His Val His His Lys Leu Val Glu Gly Leu Arg
            260                 265                 270

Phe Pro Phe Val Leu His Cys Phe Ser Leu Asp Ala Tyr Asp Phe Gln
        275                 280                 285

Lys Ile Leu Glu Leu Val Val Arg Tyr Asp His Gly Phe Leu Gly Arg
    290                 295                 300

Glu Leu Ile Lys His Leu Asp Val Val Glu Glu Met Cys Leu Glu Ser
305                 310                 315                 320
```

```
Leu Ile Phe Arg Lys Ser Ser Gln Leu Trp Trp Glu Leu Asn Gln Arg
                325                 330                 335

Leu Pro Arg Tyr Lys Glu Val Asp Ala Glu Thr Glu Asp Lys Glu Asn
            340                 345                 350

Phe Ser Thr Gly Ser Ser Ile Cys Leu Arg Lys Phe Tyr Gly Leu Ala
        355                 360                 365

Asn Arg Arg Leu Leu Leu Leu Cys Lys Ser Leu Cys Leu Val Asp Ser
    370                 375                 380

Phe Pro Gln Ile Trp His Leu Ala Glu His Ser Phe Thr Leu Glu Ser
385                 390                 395                 400

Ser Arg Leu Leu Arg Asn Arg His Leu Asp Gln Leu Leu Leu Cys Ala
                405                 410                 415

Ile His Leu His Val Arg Leu Glu Lys Leu His Leu Thr Phe Ser Met
            420                 425                 430

Ile Ile Gln His Tyr Arg Arg Gln Pro His Phe Arg Arg Ser Ala Tyr
        435                 440                 445

Arg Glu Val Ser Leu Gly Asn Gly Gln Thr Ala Asp Ile Ile Thr Phe
    450                 455                 460

Tyr Asn Ser Val Tyr Val Gln Ser Met Gly Asn Tyr Gly Arg His Leu
465                 470                 475                 480

Glu Cys Ala Gln Thr Arg Lys Ser Leu Glu Glu Ser Gln Ser Ser Val
                485                 490                 495

Gly Ile Leu Thr Glu Asn Asn Phe Gln Arg Ile Glu His Glu Ser Gln
            500                 505                 510

His Gln His Ile Phe Thr Ala Pro Ser Gln Gly Met Pro Lys Trp Leu
        515                 520                 525

Leu Leu Gln Ser Ser Thr Phe Ile Ser Arg Arg Ile Thr Thr Phe Leu
    530                 535                 540

Ala Lys Leu Ala Gln Arg Lys Ala Cys Cys Phe Glu
545                 550                 555
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<210> 23
<211> 9
<212> PRT
<213> Any Insect

<400> 23

Arg Ile Cys Ser Cys Pro Lys Arg Asp
1 5

<210> 24
<211> 9
<212> PRT
<213> Any Insect

<400> 24

Lys Ile Cys Ser Cys Pro Lys Arg Asp
1 5

<210> 25
<211> 9
<212> PRT
<213> Any Insect

<400> 25

Arg Val Cys Ser Cys Pro Lys Arg Asp
1 5

<210> 26
<211> 9
<212> PRT
<213> Any Insect

<400> 26

Lys Val Cys Ser Cys Pro Lys Arg Asp
1 5

<210> 27
<211> 9
<212> PRT
<213> Any Insect

<400> 27

Arg Ile Cys Thr Cys Pro Lys Arg Asp
1 5

<210> 28

<211> 9
<212> PRT
<213> Any Insect

<400> 28

Lys Ile Cys Thr Cys Pro Lys Arg Asp
1 5

<210> 29
<211> 9
<212> PRT
<213> Any Insect

<400> 29

Arg Val Cys Thr Cys Pro Lys Arg Asp
1 5

<210> 30
<211> 9
<212> PRT
<213> Any Insect

<400> 30

Lys Val Cys Thr Cys Pro Lys Arg Asp
1 5

<210> 31
<211> 7
<212> PRT
<213> Any Insect

<220>
<221> misc_feature
<222> (2)..(2)
<223> "X" is any amino acid

<400> 31

Phe Xaa Cys Lys Asn Ser Cys
1 5

<210> 32
<211> 7
<212> PRT
<213> Any Insect

<220>
<221> misc_feature
<222> (2)..(2)

<223> "X" is any amino acid

<400> 32

Phe Xaa Cys Gln Asn Ser Cys
1 5

<210> 33
<211> 393
<212> PRT
<213> Homo sapiens

<400> 33

Met Glu Glu Pro Gln Ser Asp Pro Ser Val Glu Pro Pro Leu Ser Gln
1 5 10 15

Glu Thr Phe Ser Asp Leu Trp Lys Leu Leu Pro Glu Asn Asn Val Leu
20 25 30

Ser Pro Leu Pro Ser Gln Ala Met Asp Asp Leu Met Leu Ser Pro Asp
35 40 45

Asp Ile Glu Gln Trp Phe Thr Glu Asp Pro Gly Pro Asp Glu Ala Pro
50 55 60

Arg Met Pro Glu Ala Ala Pro Arg Val Ala Pro Ala Pro Ala Ala Pro
65 70 75 80

Thr Pro Ala Ala Pro Ala Pro Ala Pro Ser Trp Pro Leu Ser Ser Ser
85 90 95

Val Pro Ser Gln Lys Thr Tyr Gln Gly Ser Tyr Gly Phe Arg Leu Gly
100 105 110

Phe Leu His Ser Gly Thr Ala Lys Ser Val Thr Cys Thr Tyr Ser Pro
115 120 125

Ala Leu Asn Lys Met Phe Cys Gln Leu Ala Lys Thr Cys Pro Val Gln
130 135 140

Leu Trp Val Asp Ser Thr Pro Pro Pro Gly Thr Arg Val Arg Ala Met
145 150 155 160

Ala Ile Tyr Lys Gln Ser Gln His Met Thr Glu Val Val Arg Arg Cys
165 170 175

Pro His His Glu Arg Cys Ser Asp Ser Asp Gly Leu Ala Pro Pro Gln
180 185 190

His Leu Ile Arg Val Glu Gly Asn Leu Arg Val Glu Tyr Leu Asp Asp
195 200 205

Arg Asn Thr Phe Arg His Ser Val Val Val Pro Tyr Glu Pro Pro Glu
210 215 220

Val Gly Ser Asp Cys Thr Thr Ile His Tyr Asn Tyr Met Cys Asn Ser
225 230 235 240

Ser Cys Met Gly Gly Met Asn Arg Arg Pro Ile Leu Thr Ile Ile Thr
245 250 255

Leu Glu Asp Ser Ser Gly Asn Leu Leu Gly Arg Asn Ser Phe Glu Val
260 265 270

Arg Val Cys Ala Cys Pro Gly Arg Asp Arg Arg Thr Glu Glu Glu Asn
275 280 285

Leu Arg Lys Lys Gly Glu Pro His His Glu Leu Pro Pro Gly Ser Thr
290 295 300

Lys Arg Ala Leu Pro Asn Asn Thr Ser Ser Ser Pro Gln Pro Lys Lys
305 310 315 320

Lys Pro Leu Asp Gly Glu Tyr Phe Thr Leu Gln Ile Arg Gly Arg Glu
325 330 335

Arg Phe Glu Met Phe Arg Glu Leu Asn Glu Ala Leu Glu Leu Lys Asp
340 345 350

Ala Gln Ala Gly Lys Glu Pro Gly Gly Ser Arg Ala His Ser Ser His
355 360 365

Leu Lys Ser Lys Lys Gly Gln Ser Thr Ser Arg His Lys Lys Leu Met
370 375 380

Phe Lys Thr Glu Gly Pro Asp Ser Asp
385 390

<210> 34

<211> 363
<212> PRT
<213> Xenopus laevis

<400> 34

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Met Glu Pro Ser Ser Glu Thr Gly Met Asp Pro Pro Leu Ser Gln Glu
1               5                  10                  15

Thr Phe Glu Asp Leu Trp Ser Leu Leu Pro Asp Pro Leu Gln Thr Val
            20                  25                  30

Thr Cys Arg Leu Asp Asn Leu Ser Glu Phe Pro Asp Tyr Pro Leu Ala
        35                  40                  45

Ala Asp Met Thr Val Leu Gln Glu Gly Leu Met Gly Asn Ala Val Pro
    50                  55                  60

Thr Val Thr Ser Cys Ala Val Pro Ser Thr Asp Asp Tyr Ala Gly Lys
65                  70                  75                  80

Tyr Gly Leu Gln Leu Asp Phe Gln Gln Asn Gly Thr Ala Lys Ser Val
                85                  90                  95

Thr Cys Thr Tyr Ser Pro Glu Leu Asn Lys Leu Phe Cys Gln Leu Ala
            100                 105                 110

Lys Thr Cys Pro Leu Leu Val Arg Val Glu Ser Pro Pro Pro Arg Gly
        115                 120                 125

Ser Ile Leu Arg Ala Thr Ala Val Tyr Lys Lys Ser Glu His Val Ala
    130                 135                 140

Glu Val Val Lys Arg Cys Pro His His Glu Arg Ser Val Glu Pro Gly
145                 150                 155                 160

Glu Asp Ala Ala Pro Pro Ser His Leu Met Arg Val Glu Gly Asn Leu
                165                 170                 175

Gln Ala Tyr Tyr Met Glu Asp Val Asn Ser Gly Arg His Ser Val Cys
            180                 185                 190

Val Pro Tyr Glu Gly Pro Gln Val Gly Thr Glu Cys Thr Thr Val Leu
        195                 200                 205
```

```
Tyr Asn Tyr Met Cys Asn Ser Ser Cys Met Gly Gly Met Asn Arg Arg
    210                 215                 220

Pro Ile Leu Thr Ile Ile Thr Leu Glu Thr Pro Gln Gly Leu Leu Leu
225                 230                 235                 240

Gly Arg Arg Cys Phe Glu Val Arg Val Cys Ala Cys Pro Gly Arg Asp
                245                 250                 255

Arg Arg Thr Glu Glu Asp Asn Tyr Thr Lys Lys Arg Gly Leu Lys Pro
            260                 265                 270

Ser Gly Lys Arg Glu Leu Ala His Pro Pro Ser Ser Glu Pro Pro Leu
        275                 280                 285

Pro Lys Lys Arg Leu Val Val Val Asp Asp Asp Glu Glu Ile Phe Thr
    290                 295                 300

Leu Arg Ile Lys Gly Arg Ser Arg Tyr Glu Met Ile Lys Lys Leu Asn
305                 310                 315                 320

Asp Ala Leu Glu Leu Gln Glu Ser Leu Asp Gln Gln Lys Val Thr Ile
                325                 330                 335

Lys Cys Arg Lys Cys Arg Asp Glu Ile Lys Pro Lys Lys Gly Lys Lys
            340                 345                 350

Leu Leu Val Lys Asp Glu Gln Pro Asp Ser Glu
        355                 360
```

<210> 35
<211> 564
<212> PRT
<213> Loligo forbesi

<400> 35

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Met Ser Gln Gly Thr Ser Pro Asn Ser Gln Glu Thr Phe Asn Leu Leu
1               5                   10                  15

Trp Asp Ser Leu Glu Gln Val Thr Ala Asn Glu Tyr Thr Gln Ile His
            20                  25                  30

Glu Arg Gly Val Gly Tyr Glu Tyr His Glu Ala Glu Pro Asp Gln Thr
        35                  40                  45
```

```
Ser Leu Glu Ile Ser Ala Tyr Arg Ile Ala Gln Pro Asp Pro Tyr Gly
    50                  55                  60

Arg Ser Glu Ser Tyr Asp Leu Leu Asn Pro Ile Ile Asn Gln Ile Pro
65                  70                  75                  80

Ala Pro Met Pro Ile Ala Asp Thr Gln Asn Asn Pro Leu Val Asn His
                85                  90                  95

Cys Pro Tyr Glu Asp Met Pro Val Ser Ser Thr Pro Tyr Ser Pro His
            100                 105                 110

Asp His Val Gln Ser Pro Gln Pro Ser Val Pro Ser Asn Ile Lys Tyr
        115                 120                 125

Pro Gly Glu Tyr Val Phe Glu Met Ser Phe Ala Gln Pro Ser Lys Glu
    130                 135                 140

Thr Lys Ser Thr Thr Trp Thr Tyr Ser Glu Lys Leu Asp Lys Leu Tyr
145                 150                 155                 160

Val Arg Met Ala Thr Thr Cys Pro Val Arg Phe Lys Thr Ala Arg Pro
                165                 170                 175

Pro Pro Ser Gly Cys Gln Ile Arg Ala Met Pro Ile Tyr Met Lys Pro
            180                 185                 190

Glu His Val Gln Glu Val Val Lys Arg Cys Pro Asn His Ala Thr Ala
        195                 200                 205

Lys Glu His Asn Glu Lys His Pro Ala Pro Leu His Ile Val Arg Cys
    210                 215                 220

Glu His Lys Leu Ala Lys Tyr His Glu Asp Lys Tyr Ser Gly Arg Gln
225                 230                 235                 240

Ser Val Leu Ile Pro His Glu Met Pro Gln Ala Gly Ser Glu Trp Val
                245                 250                 255

Val Asn Leu Tyr Gln Phe Met Cys Leu Gly Ser Cys Val Gly Gly Pro
            260                 265                 270

Asn Arg Arg Pro Ile Gln Leu Val Phe Thr Leu Glu Lys Asp Asn Gln
```

```
        275                 280                 285

Val Leu Gly Arg Arg Ala Val Glu Val Arg Ile Cys Ala Cys Pro Gly
    290                 295                 300

Arg Asp Arg Lys Ala Asp Glu Lys Ala Ser Leu Val Ser Lys Pro Pro
305                 310                 315                 320

Ser Pro Lys Lys Asn Gly Phe Pro Gln Arg Ser Leu Val Leu Thr Asn
                325                 330                 335

Asp Ile Thr Lys Ile Thr Pro Lys Lys Arg Lys Ile Asp Asp Glu Cys
            340                 345                 350

Phe Thr Leu Lys Val Arg Gly Arg Glu Asn Tyr Glu Ile Leu Cys Lys
        355                 360                 365

Leu Arg Asp Ile Met Glu Leu Ala Ala Arg Ile Pro Glu Ala Glu Arg
    370                 375                 380

Leu Leu Tyr Lys Gln Glu Arg Gln Ala Pro Ile Gly Arg Leu Thr Ser
385                 390                 395                 400

Leu Pro Ser Ser Ser Ser Asn Gly Ser Gln Asp Gly Ser Arg Ser Ser
                405                 410                 415

Thr Ala Phe Ser Thr Ser Asp Ser Ser Gln Val Asn Ser Ser Gln Asn
            420                 425                 430

Asn Thr Gln Met Val Asn Gly Gln Val Pro His Glu Glu Glu Thr Pro
        435                 440                 445

Val Thr Lys Cys Glu Pro Thr Glu Asn Thr Ile Ala Gln Trp Leu Thr
    450                 455                 460

Lys Leu Gly Leu Gln Ala Tyr Ile Asp Asn Phe Gln Gln Lys Gly Leu
465                 470                 475                 480

His Asn Met Phe Gln Leu Asp Glu Phe Thr Leu Glu Asp Leu Gln Ser
                485                 490                 495

Met Arg Ile Gly Thr Gly His Arg Asn Lys Ile Trp Lys Ser Leu Leu
            500                 505                 510
```

```
Asp Tyr Arg Arg Leu Leu Ser Ser Gly Thr Glu Ser Gln Ala Leu Gln
        515                 520                 525

His Ala Ala Ser Asn Ala Ser Thr Leu Ser Val Gly Ser Gln Asn Ser
    530                 535                 540

Tyr Cys Pro Gly Phe Tyr Glu Val Thr Arg Tyr Thr Tyr Lys His Thr
545                 550                 555                 560

Ile Ser Tyr Leu
```